

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



The Agricultural Student

Published monthly by

The Agricultural Student Publishing Co.

TERMS:

One Year,	\$.50
One-half Year,30
Single Copies,	5

While this paper is published with the consent and approval of the President of the University, and the officers of the School of Agriculture, the editors of this paper are alone responsible for the statements in all unsigned articles.

Address matter designed for publication to the Editor-in-Chief; business communications to the Business Manager, Agricultural Student, Columbus, Ohio.

Entered at the Postoffice, Columbus, Ohio, as second class matter.

BOARD OF EDITORS

CHARLES W. BURKETT, '95,	Editor & Manager
JOHN F. CUNNINGHAM, '97,	Ass't Business Manager
FRANKLIN P. STUMP, '92,	Alumni Editor
MURRAY M. RARICK, '96,	Circulation Manager
R. W. DUNLAP, '95,	Exchange Editor
E. J. RIGGS, '95,	Local and Personal Editor
P. E. WARD, '96,	Agricultural Editor
D. A. CROWNER, '96,	Dairy Editor
J. S. HINE, '93,	Horticultural Editor
C. E. SPIERS, '96,	Poultry Editor
FRANK RUHLEN, '96,	Swine Editor

THE year 1895 marks a distinct epoch in the history of the Ohio State University. Two long standing desires of those in authority and the student body are at last satisfied by the election of a new President and the donation of \$10,000 to equip an astronomical observatory. The long sought for man who is to be our future President comes to us from the University of Nebraska in the person of James Hulne Canfield. If we may judge men by their works, the Ohio State University under the new administration will soon be near the head of the list of America's greatest institutions of learning.

In the few years of Dr. Canfield's administration at the University of Nebraska the attendance was increased from 500 to over 1,300, and in consideration of this fact, has not the Ohio State University a future of the greatest prosperity? Added to his great executive ability, his magnetism as a speaker and his power to win friends, Doctor Canfield is an all

round hustler. Strong physically, he is able to pursue his work with that indefatigable zeal which is characteristic of him.

But amid all the praise which the incoming President certainly deserves, let us not forget the man who, through many years, has guided our University to its present enviable stage. Too many words of praise cannot be given to Doctor Scott for his action during the last few years of his work, which, after handing in his resignation several times, he has continued until a suitable person could be found to take his place.

By the incoming of the new President two needs are provided for: The institution and its affairs are placed under control of a wide-awake, competent and business-like man, and the chair of philosophy is filled by one thoroughly able for the work, in the person of the retiring President, Doctor Scott.

Looking into the future we can see our University prospering under the new management, growing, reaching out, broadening in every way, and becoming the institution of learning of the State and among the leaders of the nation.

It was with best wishes that we welcomed the *Indicator* in its first issue some few weeks ago. We were glad of the fact that the engineering students were endeavoring to extend their work and usefulness, and that such would be a grand addition to our University. We had at the time grave suspicions as to the object of the *Indicator*. Those suspicions have been confirmed. The *Indicator* is not an engineering paper, nor was it ever intended to be. This was just a covering to hide the real motives of the paper. The fact is the *Indicator* is the tool of an insignificant factor in our ranks. Were it an engineering paper it would certainly contain matter pertaining to engineering and technical subjects. But less than one-tenth of the matter is engineering news, and sometimes no engineering

matter at all; this, together with the kind of advertisements, is evidence conclusive that the paper is not what it is claimed to be. If the paper is to be devoted to the engineering department, why should not an engineering student have been chosen as editor-in-chief? The engineering society has rightly interpreted the real motives of the paper and refused almost unanimously to furnish any editors for it. Besides, the circular letter sent out by the business manager shows again that the *Indicator* is covered with a deceptive garb.

The true object of the *Indicator* is now evident to every student. It is the organ of an isolated faction of students. Its object is vengeance. Its rightful name The Vindicator.

The tactics that are being pursued by the editors are as despicable as detestable. The underhanded and cowardly methods of sneaking into the offices where the other college papers are printed and getting information and stealing matter by deceptive means, can certainly not be approved by any student, and is not the actions of college men. The whole University suffers by such methods. There is a good field here for successfully publishing an engineering journal. But let it be such a journal. Two papers publishing precisely the same matter week after week shows the folly of the existence of both. The opposition that the *Indicator* is meeting is nothing more than what it deserves. It furnishes a good lesson, in that personal grievances should not be mingled with University affairs.

FARMER BOYS, what are you going to do next year? You who have just graduated from the high school or soon will, or you who have never attended the high school at all, what are you going to do? Do you not think it better to spend a few years, or one year, or even one term in Ohio's Agricultural College in preparation of your life's work?

Do you realize that the incoming century demands your help as an

educator and worker in evolutionizing America's agriculture?

Do you not think it your duty to cultivate those talents given you, and to develop your greatest possibilities in serving and working for our honorable, glorious and exalted agriculture? If this be your sentiment, then do not hesitate as to what you ought to do next year. Push right ahead; get a free scholarship to the course in agriculture, and be with us next year. You will be well provided for here. The agricultural department at the Ohio State University is one of the best developed in America. The equipments are among the best, and the instructors are able men, with no superiors in the land.

WITH the realization of the need of some special training for our future farmers, which must come to the ex-students and alumni of our schools of agriculture, there must arise in their breasts a strong desire to do something which will bring the light to the very door of every boy who in the near future is to till an Ohio farm. Almost any one can see that the great desideratum is to have at least the rudiments of the sciences underlying the arts of agriculture and horticulture taught in our common schools by teachers thoroughly competent to teach them, and to lead the young minds under their care into accurate and minute observations of the natural objects and phenomena on every hand, so wonderfully beautiful, so delightfully enticing, so exquisitely enjoyable in the clearing up of these mysteries.

But we all immediately run against astounding difficulties. The people will not listen; it will cost too much! But we have not enough competent teachers, yet it would take many, many years of hard work at the fullest capacity of our available means to supply our schools once around with competent teachers. But little beginnings often lead to great results. It is a first requisite to have our people, a large majority of them, to

thoroughly realize the need for and belief in the feasibility of doing the work. Then all is clear. A good way to begin this education of public sentiment is for every ex-student and alumnus of our school of agriculture to arrange to give, freely of course, at least one talk a week or even a month to the pupils in his own district school or township high school. Let him plan means in connection with these talks of getting every pupil to doing something of his own accord along the line of *finding out something* about things. Make the pupils do the work; you think of how to get them to do it and set them at it, and you will be surprised how much learning will be done and how little teaching need be done. If all of us take up earnestly this line of work we would be surprised how soon public sentiment would be with us and how soon that public sentiment would crystallize into law and a great movement; and how soon a work would be wrought which would transcend in importance the result of any war ever fought on the globe; in fact, a question will be solved which is to-day the most momentous problem confronting our nation. Who is so blind as not to see this portentous cloud?

ONE of the great drawbacks to agricultural advancement is an apathy on the part of the farming classes to new ideas and new discoveries. The indifference and insensibility to needed changes are the greatest opponents to agricultural evolution. It seems there is a large body who have nothing other than an avowed purpose of kicking when ever any new system is proposed. Every nation and every generation has had its philosophers, its statesmen and its heroes; on the other hand, all of these have had their paupers, good-for-nothing fellows and narrow-gauged cranks. Add more than that, every nation, generation, vocation, denomination, every class of society, the high and the low, the rich and the poor, have been blessed with that specimen of humanity called a

“professional kicker.” And it is sad to think that in the very occupation where there is least reason for his presence, he is found in greatest numbers. Every proposed change is met by a host of professional kickers. These kickers are like snarling dogs—plenty of them around. Look at them and you will find them the most insignificant of creatures, and they make a great noise; but they never bite, all they do is to bark.

Remember, those always do the least who do the most kicking. The little ticking wheel of the watch does all the kicking, but that is about all. Give a man credit for honest kicking, but beware of the cranky kicker. If you kick have a purpose for doing so. But whatever you be, do not make kicking your profession. We speak in general, but wish it were in particular. Nevertheless, if the shoe fits you just put it on.

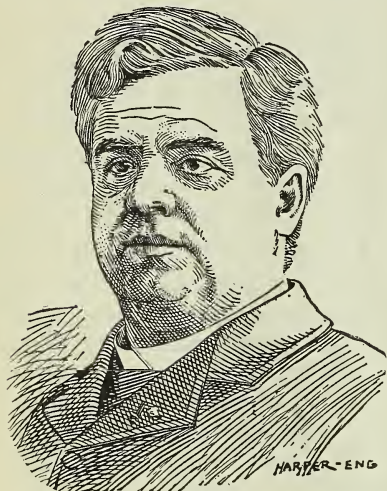
THE past month has been one of unusual activity in the horticultural department. About five acres of potatoes have been planted; the orchards have been trimmed and sprayed; peas, beets, radishes, early cabbage and other hardy crops have been started; an acre of strawberries has been set; raspberries, currants and gooseberries have been cultivated; while tomatoes, melons, cucumbers, egg-plants, peppers, etc., have been pushed along and will soon be transplanted to the open ground.

In addition to taking part in the above work the students in horticulture have taken some practical lessons in tree-planting, grafting and pollination or cross-fertilization. The advanced classes are studying floriculture and landscape gardening, while some of the special students are making a study of the strawberry, others of weeds, and others of methods of propagation.

JAMES HULNE CANFIELD,
The New President of the Ohio
State University.

A BRIEF SKETCH.

James Hulne Canfield was born at Delaware, Ohio, on the 18th of March, 1847. While quite young he was sent to Vermont, spent his early life on a farm and received his academic instruction at the Polytechnic and Collegiate Institute, at Brooklyn, New York. After graduating from Wil-



liams College with honors, in 1868, he was engaged in railway construction in Iowa and Minnesota from 1868 to 1871. He was admitted to the bar at Jackson, Michigan, in 1872, and practiced law in St. Joseph for five years.

He was called to the University of Kansas in 1877 as Professor of History and English Literature, afterward of History and Political Science and finally of American History and Civics.

He left the University of Kansas in 1891, being called to the chancellorship of the University of Nebraska, where he has remained until now.

He is a man of wide acquaintance and enviable reputation. He is a member of the Cambridge Political Economy Club, American Historical Society of Civics, National Council of Education and Minor Educational

Civic's Association, and the first vice-president of the American Economic Association. Dr. Canfield has also been President and Secretary of the National Educational Association. The degree of LL. D. was conferred upon him recently by Williams College.

With such a man as Dr. Canfield to shape her course, the future of the Ohio State University is scarcely comprehensible. And gathering our forces, we must begin anew and place our University among the leaders of the land.

Using Fungicides.

A considerable portion of the seed potatoes planted by the horticultural department the last month were treated with a solution of corrosive sublimate to prevent scab.

Corrosive sublimate or bi-chloride of mercury was dissolved in water at the rate of one ounce to eight gallons (that is 1 to 1,000), and the potatoes were soaked one hour. The same seed untreated was placed under similar conditions, and the effect or non-effect of the treatment will be apparent when the crop is harvested.

Before the buds opened apple and plum trees were sprayed with a solution of copper sulphate. This was prepared by dissolving one pound of copper sulphate (blue vitriol), and diluting to sixteen gallons. This solution is easy to prepare and apply, but should never be used upon foliage. It must be applied before the buds open.

About two weeks later or just before the blossoms opened the apple trees were thoroughly sprayed with bordeaux mixture, using the following formula:

Copper sulphate..... 4 pounds.
 Fresh, unslacked lime. 4 "
 Water32 gallons.

This work is past the experimental stage and should have its assigned place in the routine work of orchard management. It is just as much a necessity as underdraining or manuring.

THE Agricultural Student Union is in need of funds for the successful prosecution of its work. No means of securing them is at hands now except free gifts or subscription. The President has placed at the disposal of the Board of Control as much money as in his narrow financial circumstances he can possibly spare. If the half dozen more prosperous members of the union will contribute as liberally in proportion to their means as has he there will be no question as to the success of the season's work. In view of the circumstances, all of those who have signified their desire and intention to conduct experiments are cordially urged to royally show their loyalty to the Ohio State University and the cause of agricultural progress by bearing the expense of seed, etc., for the experiments this year. More members of the union who are so situated as to be unable to conduct experiments can do a lion's share by contributing money for printing, postage, etc. Now let us all show our zeal and earnestness in the work by each one doing his mite.

The writer is conducting several of the experiments and bearing all the expense willingly, and also giving liberally for the other work, and his only regret is that he can not give much more liberally.

The importance of the work is ample assurance that none will ever regret the work done and sacrifice made in its behalf.

Fraternally,

F. P. STUMP.

Convoy, Ohio.

Green House Notes.

BY J. S. HINE.

The greater part of the space in our houses was occupied by lettuce the past winter. We have done no special experimental work on this crop, but points of interest have been gained. The aphids have been entirely prevented by the use of tobacco. We fumigate regularly twice each week and our product has had the reputa-

tion in the market of being "free from lice." We have made observations regarding water and can say that lettuce can easily be damaged by keeping the soil too wet. The bed that was watered moderately gave better returns and a superior product to the one that received an abundance of water.

The main objection in giving the soil too much water is shown in the decreased healthfulness of the plants. Where we kept the surface wet the bottom leaves turned yellow and mildewed, and thus the weight was decreased. By keeping the surface of the bed dry, this was avoided to a certain extent, and the bunches went into the market in perfect condition. From a commercial standpoint no vegetable is preferable to lettuce as a green house crop for February, March and April. This season the Columbus dealers could not procure a sufficient quantity to supply the demand. The proper way to dispose of lettuce is by weight, but many prefer to purchase by the dozen. We find that if we sell by the dozen we can not get the market price per pound for large stock. A good bunch of lettuce that will retail readily for five cents is in demand by most dealers, so we intend hereafter to set plants six inches apart each way instead of six by eight as we have practiced heretofore. This will give ample space to produce the required size, and the number of plants on the same ground will be increased one third.

In order to obtain a perfect stand of even plants we are very particular in selection. A poor plant transferred into a bed will generally remain poor; therefore, we raise a great number of plants and only use those that are perfect and healthy. Sometimes a plant is placed in the bed that does not start well. In order to be sure that we have a good stand of healthy plants we go over the beds every few days after transplanting and pull out all that are unhealthy and plant good ones in their places.

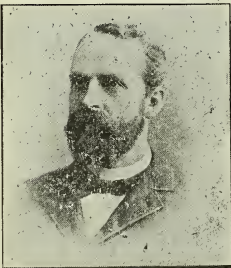
Chrysanthemums are an important crop for the green house during October and November. Four hundred plants were grown out of doors last summer. About October 1st they were transferred to the green house where they were soon in full bloom. This year the returns from equal amounts of ground to lettuce and chrysanthemums were about the same. We are confident, however, that another trial will show better results for the flowers.

We have found the Cincinnati Market radish an exceedingly extra sort for forcing. Fine, large radishes were produced in forty days, from seed, during the severe weather of January and February. In quality it is not so good as French Breakfast, but it has a great demand in Columbus markets.

Beets are a good green house crop to raise for variety's sake, but in large quantities they can not be disposed of.

Prof. W. A. Kellerman, Ph. D.

The subject of this sketch was born May 1, 1850. He was reared on his father's farm, in Fairfield county, Ohio. At seventeen years of age he began teaching school, and later prepared for college at the Fairfield Academy. He entered Cornell University in 1871 and completed the course in 1874, being a class mate of Professors Randall and Lazenby, now also of the Ohio State University.



Professor Kellerman was, immediately upon his graduation, elected teacher of natural science in the Wisconsin State Normal School. This position he held for five years, when

he resigned to continue his studies in the German Universities.

The first year he spent at Goettingen studying botany with Professors Reinke and Solnes-Laubach. He also heard lectures on zoology by Professor Ehlers. The following year he studied with the eminent botanists, Heer, Winter and Dodel, and attended a course of lectures on geology by Prof. A. Heim.

Taking his doctor's degree—his thesis receiving marked credit—Prof. Kellerman returned to this country, and has been teaching continuously since.

He was appointed Professor of Botany and Zoology in the Kansas State Agricultural College in 1882, and shortly afterward was given the chair of botany alone. He was also made botanist to the Agricultural Experiment Station and to the State Board of Agriculture. The first and most extended investigation made in this country on the smuts of cereals was during this time carried on by Prof. Kellerman and his assistant, Mr. Swingle.

In 1891 he was called to the Professorship of Botany in the Ohio State University. He was early interested in this institution, and labored to secure its location at Lancaster, the county seat of Fairfield county. But he now thinks it was established at the proper place, and continues to labor for its welfare with untiring energy and enthusiasm.

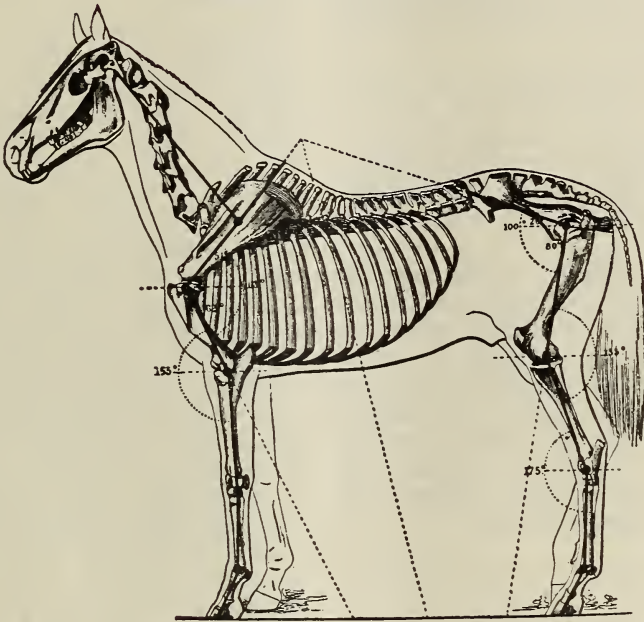
He began the study of botany before entering college, and his studies and investigations in this branch have never been interrupted. He has written considerably for journals and also prepared several pamphlets and text-books for class use. He is also author of a large number of new species of fungi. His last publications are a text-book on the "Spring Flora of Ohio" and a pamphlet on the "Ohio Forest Trees."

The nucleus of important collections at the Wisconsin State Normal School, at the Kansas State Agricul-

tural College and at our own State University, testify to his skill as collector. His own collection of parasitic fungi—which is deposited for use in the botanical department—is one of the largest private herbaria in the West.

The Ohio State Horticultural Society, through its President, Mr. E. H. Cushman, has appointed Prof. W. R. Lazenby, Dr. O. W. Aldrich and Prof. F. M. Webster a committee to draft and secure the enactment of such laws regarding injurious insects as will prove beneficial to the horticultural interests of the State.

Animal Conformation.



The study of the conformation of the several domesticated animals with regard to their adaptation to specific uses, receives the careful attention of the student of the School of Agriculture of the Ohio State University. The thoroughness with which the subject is pursued by the advanced student, may be illustrated by referring to one phase of this study.

Horses are used for two purposes, either for force or for speed. The running and trotting horse represents those in which great speed and little force is needed. The heavy draft horse represents those used for force, speed being only a secondary consid-

eration; while in our light draft horse, our carriage horse, and our heavy trotting horse, we have intermediate types in which a fair degree of both speed and force is required.

Looked at as a machine, the animal is a combined engine and boiler. As an engine, his bones represent a complex system of levers with muscles for power. The length of these levers, their relation to one another, and the attachment, length and size of the muscles, largely determine the amount of force and speed attained. The mechanical principles which apply in the engine with regard to force and speed apply in the horse. A dis-

position of the bones in such a way as to increase the speed, decreases the force; and any disposition of the bones which increases force, decreases the speed. Thus, for example, of two horses, the same height at the croup, the one with a horizontal croup will have greater speed, while the one with a more vertical croup can exert greater force. For with a horizontal croup, the extent to which the members can be moved backward, and, hence, the body propelled forward, will be greater than where the croup is more vertical.

Both the muscles and the bones will be longer and the body will be propelled in a more horizontal direction. On the other hand, the horizontal croup will be weaker and of less advantage either for draft or for the saddle.

Although it might not seem so at first, the angles made by the different bones of the fore and hind members have but slight variation in horses of good conformation adapted to a given use. The proper angles are subject to reasonable accurate determination. The character of this work may be seen from the illustration and the following tabular statement:

STUDENT'S CARD FOR THE ARTICULAR ANGLES OF THE HORSE.

Name of Animal.....
Breed or Service
Sex
Age
Color and Markings.....
Blemishes
Defects
Estimated Weight.....
Actual Weight
Owner
P. O.

INCLINATION UPON THE HORIZON.		Degrees.
Scapular.....		
Humeral.....		
Iliac.....		
Femoral.....		
Tibial.....		

ARTICULAR ANGLES IN STATIONS.	Degree.	
Scapular-humeral.....		
Humero-radial.....		
Metacarpo-phalangeal.....		
Ilio-femoral.....		
Femoro-tibial.....		
Tibio-metatarsal.....		
Metatarsophalangeal.....		

ATTITUDES IN STATION.

Anterior members viewed in profile
Anterior members viewed in front.....
Posterior members viewed in profile.....
Posterior members viewed from behind.....
Student
Date

No amount of study or mere book knowledge will take the place of artistic instinct and actual practice in judging animal conformation, but there are some elementary principles which can be readily taught and which will greatly supplement the artistic instincts as well as greatly help in obtaining practical experience. Not the least benefit from this sort of study is the fact that the knowledge of proportions obtained by the use of precise instruments will enable the student to appreciate much more readily by the means of the eye alone what is proper conformation. The subject of animal conformation is at once taken from the field of empiricism when the student knows that good conformation is only because he is told it is so, to a place where the student knows what good conformation is because he sees the reason for it.

At the last meeting of the Townsend Agricultural Society the following officers were chosen for the ensuing term: E. J. Riggs, President; J. T. Dallas, Vice-President; P. Baer, Recording Secretary; M. R. Shellenbarger, Corresponding Secretary; C. A. Clawson, Treasurer; C. W. Burkett, Historian; F. Murphy, Librarian; P. L. Pfarr, Critic; C. J. Miller, Sergeant-at-Arms.

DOES

10 Per Cent. off

Teachers, Students and Clerks, and many others. We ask you to compare our prices, which are marked in plain figures, with the goods you get 10 Per Cent. Discount on and see which is cheapest. We have but one price to all alike. Come and see us at 173 North High St.

STARKEY'S SHOE HOUSE.

Guarantee that you are getting goods any cheaper? Some Shoe Dealers are offering a Discount of 10 Per Cent. to

Swine Raising.

Swine raising has been the most profitable kind of stock raising for several years. The industry has grown much in this time. Still there are many farmers that are producing pork now that are not making much money. Other farmers look to them as samples and think there is no money to be made in that kind of farming. While if they would go into the work with the intention of making a success they would be rewarded with gain and some enjoyment.

Some have sows that will raise three litters of pigs in one year. While the most of the farmers in this country do not get but one litter, and perhaps only one pig then.

It is time that the breeders should give this subject more attention. It costs about as much to keep a sow that raises only one pig as it does to keep one that raises fifteen or twenty, not counting the cost for raising the pigs. Many breeders are feeding for the individual than for numbers.

In the Western States they can raise and keep hogs cheaper than we can here. The way we can compete with them is to have sows that will breed oftener and that will raise large numbers each time. No farmer should keep a brood sow that will not raise two good bunches of pigs each year.

Every farmer that raises hogs in this State should have a good clover field or some other legume, so that the clover can be plowed under the following year for corn. A good rotation for swine raising is corn, oats or wheat and clover. In this way one can put up some clover hay and have some for winter feed.

The farmer should arrange the feeding so that every bunch of hogs that are fed for market should be fed while on clover; they will make better growth and much better meat than if fed alone on corn or wheat.

To produce pigs that can always be fattened on clover it will be necessary to have them born at some certain time. By having the spring pigs

come the first of March they can be put on market in October or November. The fall pigs to come the first of September, kept over winter and put on market in May or June.

Pig raising is an important subject. More practical and successful raisers should contribute to agriculture papers on this subject, for farmers always welcome such information with joy. This industry is not developed as it should be, and it is only the united efforts of men that insure success in anything.

Lessons from the University Farm.

One of the great problems that each farmer must settle for himself is the fixing upon a rotation of crops suitable to his soil and methods. Rotation of farm crops is, in many cases, an evil, but it is a necessary evil. It is a difficult matter to get a series of crops to follow one another, all of which can be profitably utilized. For instance, clover is an excellent crop to have in a rotation, on account of its fertilizing properties, but many farmers can not make any use of clover. So it is with many crops. But upon the selecting of a rational rotation depends the farmer's success.

In selecting a rotation many points must be considered. Among them the most important are, the adaptability of the soil, the needs of the market, the readiness and directness with which the crops can be converted into cash and their exhaustiveness upon the soil. Every good rotation must take into account some method of returning to the soil in large measure that which is taken from it.

Among the problems studied on the University farm is this one of crop rotation. One, these crops in two years' rotation: Clover followed by ensilage—corn the first year and wheat the next year has been described in these columns. One plowing sufficeth for it. Another rotation about to be tried in corn, wheat and mammoth clover in the order named. One plowing is all that is necessary, and all three

are cash crops, provided the clover is grown for seed as it commonly is. This rotation has two things to commend it, the small amount of work to prepare for the crops, and the fact that all three, if desired, can be easily converted into cash.

These are suggestive rotations. They lay down lines along which most farmers could improve their rotation.

JAMES MCOWEN has been offered a position as foreman of a fruit farm near Gambier.

At a recent farmers' institute, held in London, Madison county, Mr. Arnette Harbage, a graduate in the Department of Veterinary Medicine, read an excellent paper entitled "College Education of our Young Farmers."

Professor Lazenby was one of the speakers at the same institute.

M. Schadt has accepted a position in a creamery at Convoy.

HON. EMERSON McMILLEN has again come to the aid of the Ohio State University. This time he agrees to construct the astronomical observatory providing the authorities expend an equal amount of money in beautifying the grounds and in constructing a botanical garden. This is only conditional, but there is no question regarding the acceptance of Mr. McMillen's proposition.

TRY...



For Your Next Suit.

FOR SALE Eight Plymouth Rock COCKERELS. \$1.00 Each. Department of Agriculture, Ohio State University, Columbus, Ohio.

